

## **Creating and Locating R&D Lab spaces in Indian Cities - Experienced Overview**

India has been going through roller coaster phase in the context of being Knowledge process Outsourcing destination over the last 10 to 12 years starting with the tightening of the IPR in India which was followed by a massive surge in the Contract research facilities being set up from 2005 till late 2008 until the meltdown led by the Lehmann brothers led global financial crisis in late Sep 2008. This meltdown led to massive retraction of investments being made by Multinationals in the Indian Contract Research Juggernaut which led to lot of projects being scrapped and Pharma companies rolling back their massive investment in CRO and subsequently cautiously investing in their own In house R & D facilities or leasing out premises to cut down on the costs. The entry of Lab development companies like Alexandria Real Estates clearly signaled a latent potential for leased on warm shell Lab spaces immediately after the 2008 debacle. Entry of Multinationals saw big investments in sprawling Biotech parks in southern cities like Hyderabad, Bangalore, to some extent in Chennai, Trivandrum, Cochin also in Pune, Goa , Ahmedabad, Gurgaon and Kolkata mostly on the outskirts since Real estate is expensive .

Many companies in India then moved to this idea of the suburban research campus and relocated their research operations to be within identified innovation clusters where groups of other companies and institutions were doing similar research. This required the scientists and the support staff to commute to the out skirts of cities often requiring 1 to 2 hours each way, or relocate their residences to small towns to cut down on this commute time, which resulted to lot of talent refusing to work at such premises and thus arose a need for smaller compact Research facilities within city limits, with easy access and all the permissions to operate from local bodies and Organizations started competing fiercely for talent and lab spaces with ambience, and researchers demanding amenity spaces.

There are examples of Labs being set up in Mumbai suburbs and Pune city limits where IT oriented core and shell of the building were leased out and fitted out to meet research Labs unique requirements. These buildings were multi-tenant facilities, where once a Lab is set up by one tenant the developers started promoting them as a Laboratory real estate. Examples of Multi storied Glass façade building designed for small offices and BPO's which were converted to Laboratories with major compromises on layout design and safety. Additional costs were incurred to accommodate exhaust systems that fit into existing service shafts, lack of connections for draining effluents leading to system for collection and disposal of the

same and Fume hood exhaust being let out untreated into atmosphere for lack of terrace area to install scrubbers.

Architectural constraints have led to instances where the duct diameters had to be reduced to pass through the existing shafts thus increasing duct velocities and noise, which in turn led to a forced diversity to be built for the Fume hood usage to ensure that duct velocities were within acceptable range, leading to additional unexpected costs. This again an example of accommodating Labs in available building spaces with compromise on safety and increased costs

Utilities are another differentiator of good lab space. A proper lab facility needs to have adequate HVAC delivered throughout the building. This can be particularly challenging to tenant whose needs are known and they try to accommodate in existing warm shells with chillers already provided. The key, once again, is designing systems that can be flexible. Different types of research will have different air flow requirements, and different approaches to heating and cooling requirements also influence the demand for HVAC. Systems must be able to ramp up to handle hood intensive chemistry and also be able to ramp down to handle dry labs, and they need to do both tasks efficiently. A developer doesn't need to install the capacity to provide maximum CFM from the start, but the system must have the flexibility to expand as the building fills or researchers' needs grow. Space is required inside of shafts to run specialty exhausts and also on the roof to locate the fans, and this is typically included in the rent paid by the tenant.

As long as the trend to move research to Metropolitan areas continues, researchers are more and more likely to find themselves in specialized lab buildings. Experienced lab developers have found that it takes more than just slapping a high-tech facade on a building and calling it lab ready. There is a need to develop Laboratory specific buildings, that are flexible, with extra floor-to-floor height, proper bay spacing and utilities sized for modern research. We as Architects, Lab planners and end users need labs where companies want to be and buildings that researchers want to work in. But don't fall into the trap of thinking that all lab buildings are the same. Not all developer lab buildings are created equal. Make sure the space works now as well as in the future. Let us make sure the building has the infrastructure needed and can efficiently provide the utilities required for the wide spectrum of Laboratories that are expected to be coming up in India cities where the Tenant Improvement allowance to be paid by the Lab building developers are reduced and Tenants can lease out and move into the property at the earliest.

So, as concerned and involved stakeholders, we need to work towards such facilities with proper investments being solicited and awareness being created.